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09/582,474

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KANETAKA SEKIGUCHI

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01/16/2002

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EXAMINER

RUDE, TIMOTHY L

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 01/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/582,474

Applicant(s)

SEKIGUCHI

Examiner

Timothy L Rude

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-7,10-15,19-21,24,26,28-34,36,38-40,42-44,46 and 47 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 5-7,10-15,19-21,24,26,28-34,36,38-40,42 and 43 is/are rejected.
- 7) ☒ Claim(s) 44,46 and 47 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 5, and 32-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 5, and 32-34, the recitation "in that order from the first substrate side on the second substrate" is unclear. Correction to distinctly claim the subject matter is needed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 5, 10, and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Iijima USPAT 6,124,905.

As to claim 5, Iijima discloses all recitations in a passive matrix display, Figure 4 and Figure 7 (col. 9 line 43 through col. 12, line 4). Referring to Figure 7, the first substrate is 21, the signal electrodes are 24, the second substrate is 22, the opposed electrodes are 25, the liquid crystal material is 26, the seal is 23, the polarizing film on the first substrate is 12, the white diffusing film is 30, the polarizing film is 60, and the reflector is 90. Note that the reflector (90 in Figure 4) is not shown in Figure 7; however, the embodiment illustrated by Figure 7 has such a reflector (col. 11, lines 29-36).

As to claim 10 and 14, Iijima discloses all recitations in a passive matrix display, Figure 1, Figure 4, and Figure 7 (col. 9 line 43 through col. 12, line 4). Referring to Figure 7, the first substrate is 21, the signal electrodes are 24, the second substrate is 22, the opposed electrodes are 25, the liquid crystal material is 26, the seal is 23, the polarizing film on the first substrate is 12, the white diffusing film is 30, and the reflector being made up of a reflection-type polarizer is 60 with laminated structure (col. 4, lines 6-50).

As to claims 13, Iijima discloses all recitations in a passive matrix display, Figure 4 and Figure 7 (col. 9 line 43 through col. 12, line 4). Referring to Figure 7, the first substrate is 21, the signal electrodes are 24, the second substrate is 22, the opposed electrodes are 25, the liquid crystal material is 26, the seal is 23, the polarizing film on the first substrate is 12, the polarizer on the second substrate is 40, the white diffusing film is 30, and the reflector being made up of a reflection-type polarizer is 60.

As to claim 15, Iijima discloses all recitations in a passive matrix display, Figure 4 and Figure 7 (col. 9 line 43 through col. 12, line 4). Referring to Figure 7, the first substrate is 21, the signal electrodes are 24, the second substrate is 22, the opposed electrodes are 25, the liquid crystal material is 26, the seal is 23, the polarizing film on the first substrate is 12, the polarizer on the second substrate is 40, the white diffusing film is 30, and the reflector is 90. Note that the reflector (90 in Figure 4) is not shown in Figure 7; however, the embodiment illustrated by Figure 7 has such a reflector (col. 11, lines 29-36). Use of a hologram reflector, 90, is disclosed (col. 11, lines 23-28).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6, 12, 17, 19-22, 34, 36, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima.

As to claims 6 and 36, Iijima teaches the use of a transfective plate (180 in Figure 14, and col. 1, lines 22-44) and an auxiliary light source (back light 210 in Figure 14) in his discussion of prior art. The transfective plate is positioned between the light source, 210, and the lower polarizer, 170, to provide good contrast in both back lighted and ambient lighted operating conditions. Iijima teaches the use of

Iijima is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to use a transfective plate to provide reflection of ambient light and transmission of back light.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Iijima with the transfective plate and back light of Iijima.

As to claim 12, Iijima teaches the use of multiple reflective polarizers to transmit polarized light in one optical axis while reflecting polarized light in the other substantially orthogonal optical axis (Figure 7).

Iijima is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to use multiple reflective polarizers to transmit polarized light in one optical axis while reflecting polarized light in the other substantially orthogonal optical axis (Figure 7).

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Iijima with the reflective polarizer of Iijima.

As to claims 17 and 38, Iijima teaches the use of a coloring the light diffusion layer (col. 11, lines 17-28) along with other color methods (col. 7, lines 41-48) in conjunction with a auxiliary light source (70, Figure 7).

Iijima is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add color layers or to add color to existing layers to achieve color display effects.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Iijima by coloring the light diffusion layer.

As to claim 19, Iijima teaches the use of an absorption layer in a discussion of prior art (Figure 15 and col. 1, line 58 through col. 2, line 41) to improve contrast.

Iijima is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add an absorption layer to improve contrast.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Iijima by adding a light absorption layer.

As to claim 20, Iijima teaches the use of a color layer with a plurality of portions (col. 7, lines 41-48).

Iijima is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a color layer with a plurality of portions to achieve color display effects.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Iijima by adding color layer with a plurality of portions.

As to claims 21 and 22, Iijima teaches the use of Lumisty Film and Lumisty 80 with micro-pearl (col. 12, lines 5-39) which are white diffusing with a high transmittance.

As to claims 34 and 39, Iijima teaches the use of color filters (col. 7, lines 41-48) to provide color display effects, in conjunction with a auxiliary light source (70, Figure 7).

Iijima is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a color filter to achieve color display effects.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Iijima by adding color filters to the pixels.

4. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima in view of Hiroshi et al (Hiroshi) Japanese Publication 10-239683.

As to claim 7, Iijima does not explicitly disclose a diffusion film disposed between the first substrate and the polarizing film.

Hiroshi teaches the use of a white diffusion film disposed between the first substrate and the polarizing film (Drawing 1) to improve viewing angle (third from last para).

Hiroshi is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a diffusion film disposed between the first substrate and the polarizing film to improve viewing angle.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Iijima with the diffusion film disposed between the first substrate and the polarizing film.

As to claim 11, Iijima discloses all recitations except the diffusing film in a passive matrix display, Figure 4 and Figure 7 (col. 9 line 43 through col. 12, line 4). Referring to Figure 7, the first substrate is 21, the signal electrodes are 24, the second substrate is 22, the opposed electrodes are 25, the liquid crystal material is 26, the seal is 23, the polarizing film on the first substrate is 12, and the reflector being made up of a reflection-type polarizer is 60.

Hiroshi teaches the use of a white diffusion film disposed between the first substrate and the polarizing film (Drawing 1) to improve viewing angle (third from last para).

Hiroshi is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a diffusion film disposed between the first substrate and the polarizing film to improve viewing angle.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Iijima with the diffusion film disposed between the first substrate and the polarizing film.

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima in view of Chen et al (Chen) USPAT 5,663,816.

As to claim 15, Iijima discloses all recitations in a passive matrix display, Figure 4 and Figure 7 (col. 9 line 43 through col. 12, line 4). Referring to Figure 7, the first substrate is 21, the signal electrodes are 24, the second substrate is 22, the opposed electrodes are 25, the liquid crystal material is 26, the seal is 23, the polarizing film on the first substrate is 12, the polarizer on the second substrate is 40, the white diffusing film is 30, and the holographic reflector is 90.

Chen also teaches the use of a holographic reflector (Figure 3, col. 2, lines 53-59) to preferentially reflect light along a preferred viewing angle.

Chen is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to use a holographic reflector to preferentially reflect light along a preferred viewing angle.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Iijima with the holographic reflector of Chen.

6. Claims 21, 22, 24, 26, and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima in view of Hirozo, Japanese Publication 08-146207.

As to claims 21, 22, 24, 26, and 28-31, Hirozo teaches the use of a film with approximate quadratic surface texture and internal transparent beads (abstract and entire publication) to achieve good diffusion with a thin and highly transmissive (greater than 70%) layer.

Hirozo is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to use a film with approximate quadratic surface texture and internal transparent beads to achieve good diffusion with a thin and highly transmissive (greater than 70%) layer.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Iijima with the holographic reflector of Chen.

Further as to claim 30, Iijima teaches the use of a transfective plate (180 in Figure 14, and col. 1, lines 22-44) in his discussion of prior art. The transfective plate is positioned between the light source, 210, and the lower polarizer, 170, to provide good contrast in both back lighted and ambient lighted operating conditions.

Iijima is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to use a transfective plate to provide reflection of ambient light and transmission of back light.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Iijima with the transfective plate of Iijima.

7. Claims 40, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima in view of Mitsui et al (Mitsui) USPAT 6,175,399 B1.

As to claims 40, 42, and 43, Mitsui teaches the use of a liquid crystal diffuser to achieve high contrast (abstract).

Mitsui is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to use a liquid crystal diffuser to improve contrast.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Iijima with the liquid crystal diffuser of Mitsui.

Allowable Subject Matter

8. Claims 32, 33, 44, 46, and 47 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: As to claims 32 and 33, a review of relevant prior art did not disclose a diffusion

layer having regions around the pixels of a diffusibility differing from the regions over the pixels.

As to claims 44, 46, and 47, a review of relevant prior art did not disclose a liquid crystal diffusion film with electrodes such that the diffusion performance is variable with applied voltage.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (703) 305-0418. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William L Sikes can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.



Timothy L Rude
Examiner
Art Unit 2871

TLR
January 11, 2002



William L. Sikes
Supervisory Patent Examiner
Technology Center 2800